WILLIAM J. KLEIN
400 E. GARFIELD AVE.
INGLESIDE, IL 60041

ARTWORX

written by

DAVID C. RIDGE

Contributions by

W. E. O'Neill
Deborah A. Shaggi

"GUITAR"

***** INDEX

INTRODUCTION.....2

LOADING THE PROGRAM.....3

SKETCH.....4

SPRAY.....5

FILL.....6

STRING.....7

DEFINE.....7

RADIAL.....7

CIRCLE.....8

ARC.....8

ELLIPSE.....8

RELOCATE.....9

DUPLICATE.....10

ROTATE.....10

TEXT.....11

COPY.....12

LOAD.....12

SAVE.....12

UDG.....12

GLOBAL.....14

WINDOW.....14

COARSE.....14

FINE.....14

MAGNIFY.....15

COMPRESS.....15

MIRROR.....15

COLOR.....16

GALLERY.....19

BACK-UP COPIES.....20

ARTWORX

COPYRIGHT 1985 NOVELSOFT

Written by David C. Ridge

Contributions by
Deborah A. Shaggi
W. E. O'Neill

The program ARTWORX and ARTWORX GALLERY and the accompanying documentation are copyright and is sold subject to the condition that it shall not be lent, sold, resold, hired out or otherwise circulated.

NOVELSOFT
186-Seventh Street
Toronto, Ontario
Canada M8V 3B4

INTRODUCTION

First, let me thank-you for choosing ARTWORX. I know you will not be disappointed. I know this because, as the author of the program, I have made every effort to create the ULTIMATE artistic graphics program available anywhere! When you become familiar with ARTWORX, I'm sure you will agree that these words have meaning.

The only phrase seen in documentation or a review more often than "user friendly", is the phrase "...while most programs claim to be user friendly, such and such really is...". Am I right? How many times have you read this?! I am so confident regarding ARTWORX in this area I will not bore you with any worn magazine cliche. Judge for yourself.

WARNING

IT IS IMPORTANT THAT YOU READ THIS MANUAL COMPLETELY BEFORE ATTEMPTING TO CREATE ANY COMPLEX IMAGES. ACCIDENTAL LOSS OR DISTORTION OF THE IMAGE IS POSSIBLE WITHOUT A FULL UNDERSTANDING OF HOW EACH FEATURE OPERATES. YOU WILL FIND THE APPROPRIATE WARNINGS FOR EACH FEATURE IN THE "DESCRIPTION OF FEATURES" SECTION.

NOTE: All efforts have been made to ensure there are no errors in this manual or in the program ARTWORX. NOVELSOFT can assume no responsibility for errors or their consequences, either in this manual or in the program ARTWORX.

LOADING THE PROGRAM

(cassette version)

The cassette you have been provided with has one copy of ARTWORX on side "A" and five examples of art work on side "B". These examples are "guitar", "k", "bike", "chart", and "pie". Also on side "B" is a companion utility program called ARTWORX GALLERY. To load ARTWORX simply type LOAD "" and press enter. The program fills the entire RAM and is approximately 70% machine code. Load time is approximately three minutes. When ARTWORX is finished LOADing, the main menu will be on the screen.

(disc version)

The floppy you have been provided with has several separate programs on it however, most of these are used to run ARTWORX. There are only two programs on this floppy that you will load directly. These are "artworx" and "gallery". There are also five examples of art work. These are "guitar", "k", "bike", "chart", and "pie". To load ARTWORX simply type PRINT #4: LOAD "artworx" and press enter. After about three seconds you will be presented with the ARTWORX main menu.

NOTE: For the TIMEX/SINCLAIR 2068 a joystick is required in the left port.

To select a feature, you simply use the joystick to locate the cursor so that it encompasses the first inverse letter of each feature. Then press the fire button and that's it! If you observe the main menu cursor closely, you will notice that when the joystick is activated, the first three movements of the cursor are at 1/3 speed and then it automatically shifts into high speed. This is so that you can move across the menu rapidly and still be able to easily zero in on the feature you wish to select.

You will notice at the bottom of the screen "Home Square=View". Anytime you want to view the drawing screen without selecting any particular feature, you press the fire button when the cursor is in the home square (upper left corner). Press the space bar to return to the menu.

The cardinal rule to remember which makes ARTWORX so easy to use is "THE SPACE BAR WILL BRING YOU BACK TO THE MAIN MENU". It does not matter where in the program you are or what feature you are in. You can never be lost or confused as with some programs which have you cycling through endless sub-menus. Always remember "Space bar=Menu". It will be easy to remember because "Space=Menu" is in the help line area of every feature. "Space=Menu" is not at the bottom of the screen when using "Home Square=View" so that the screen is uncluttered for display or photographing.

DESCRIPTION OF FEATURES

FREE

All features in this category are free-hand. That is to say all images created using these features are determined by your own doodling with the joystick.

NOTE: Most keys and buttons used in ARTWORX require a quick, short press. If you linger on a button, you are likely to cycle the feature several times.

SKETCH

Use your joystick to locate the selection cursor over the first letter of SKETCH and press the fire button. You will be presented with the drawing screen and the drawing cursor in the center of the screen. At the bottom left of the screen is your XY co-ordinate indicator which will change as the cursor moves. You can use these co-ordinates for reference in order to produce accurate cursor positioning.

In the next line you have the parameter adjustments for SKETCH. You adjust these parameters by pressing the key which corresponds to the first letter of the desired parameter. E.G. Press "V" for Velocity. You have four each of Velocity, Density and Brush.

Velocity is simply the speed of the cursor movement. To move across the screen fast you would select Velocity 4. For precision work select Velocity 1 or 2.

Density changes the dot or pixel density of the line the cursor will draw. E.G. Density 1 gives you a solid line with no spaces between each pixel. Density 2 gives you a line with every second pixel lit up. Density 3 every third pixel and so on.

Brush changes the width or thickness of the line. Brush 1 is one pixel wide. Brush 2 is 2 pixels wide and so on.

All parameters can be used in any combination! E.G. Velocity 1, Density 4, Brush 3. This combination ability gives you up to 64 different combinations for SKETCH!!

Notice at the bottom of the screen there is a help line to explain how to operate this part of the feature. Every feature has a help line or two at the bottom. There is a great deal of consistency of operation throughout ARTWORX so that most features operate in a similar manner.

To turn SKETCH on and off you use the joystick button (as the help line explains). An important rule to remember is the cursor is on when it is solid looking and off when it is hollow or transparent. Try holding the joystick button down continuously. Notice that the cursor changes from solid to tansparent and back to solid again. When the cursor is on, it will draw wherever the cursor tip is moved.

When the cursor is off it will move around the screen without drawing and will not disturb anything that it moves over top of. These on/off signals are the standard throughout the program. Note that all reference is from the tip of the cursor. After you finish doodling, select GLOBAL erase to clear the screen.

SKETCH HINTS AND TIPS

1) If you want to move the cursor quickly from one side of the screen to the other, with the cursor off, select Velocity 4 and Density 4.

2) The screen edges are your drawing boundaries with the lower left corner being 0,16 rather than the usual 0,0. This is due to the last two text lines of the screen being used for information display.

3) Note that because the drawing cursor is angled to the right that it will wrap around the screen to some extent when pushed against the right screen boundary. Remember in this case that the cursor is still drawing on the right, even though most of the cursor appears on the left.

SPRAY

Select SPRAY from the main menu. You will see the familiar drawing cursor, parameter adjustments and help line at the bottom of the screen. SPRAY is a spray paint simulation which lights pixels in a random pattern in an eight pixel circumference around the tip of the cursor.

Velocity means the same as in SKETCH. Density changes the density of the spray accumulation. Note that SPRAY works just like the real thing by producing more dense accumulation when sprayed in the same spot several times!

SPRAY HINTS AND TIPS

1) When SPRAY is on, the cursor will spray only when the cursor is moving.

2) SPRAY can be used to shade an area or for a stiple effect.

FILL

This is a very useful utility which will fill any COMPLETELY ENCLOSED image. By fill I mean it will turn on every pixel inside the boundary of the shape. The lines making up the image must not contain any spaces between pixels (Density 1).

Try it! Go into SKETCH and draw a small box or triangle. Then select FILL and place the tip of the cursor inside the image, at the top. Toggle FILL on with the fire button and move the cursor downward. VOILA! You can FILL any enclosed shape as much as you like then toggle FILL off. You may also start filling at the bottom of the shape and move upwards.

If the FILL routine encounters a gap in one of the boundaries of the image you are filling, one of two things will happen.

1) If there is another image beside the image you are filling, the fill line will run to it.

2) If there is no image beside the one you are filling and the FILL scan routine continues to the screen edge without contacting any images, then the cursor will automatically toggle off.

Note that one of the two above situations can also occur if you move the cursor beyond the boundary of the shape you are filling.

FILL HINTS AND TIPS

1) Select a low Velocity when filling a small or narrow shape. The speed of cursor movement is related to how large an area is being filled.

LINE

You have no doubt noticed that ARTWORX will only draw lines in eight different directions or angles when using any free hand feature. This is true of any computers which use an ATARI compatible joystick. The features in the LINE category provide you with various solutions to the problem by allowing you to create lines at any angle.

STRING

Select STRING from the menu. You will be instructed to use the joystick and fire button to define your starting point. Now you may move the cursor around the screen and a line will follow the cursor from the starting point that you have defined. This line will follow the cursor at any angle and will go over any image on the screen without disturbing it!

When you have created a line of the length and angle you desire, simply press the fire button to commit it to the screen. After you commit the line, you are returned to the beginning of the feature.

DEFINE

This feature also draws a line at any angle but operates in a slightly different manner. In DEFINE you define your starting point and your finishing point. Once the two points are defined, a line will connect them. This line can also be at any angle.

Notice that when you define your starting point that a single pixel reference point is left on the screen. This is so you will know exactly where you defined your points. You will find that most features leave a reference of this type. Again, after the line is drawn, you will be brought back to the beginning of the feature. This is also a standard throughout ARTWORX.

RADIAL

This feature is a rather whimsical extension of STRING. It operates exactly the same as STRING but creates multiple lines instead of one. The Density adjustment refers to the closeness of lines. It can create dazzling abstract patterns using different colors (more on color soon)!

CIRCLE

CIRCLE

Upon selecting CIRCLE you are asked to define the center of the circle and then the length of the radius. That's all there is to it! The computer will do the rest. Note that if you define a radius which, if drawn, would go off the screen edge, a flashing warning "TOO LARGE" will appear at the bottom of the screen. CIRCLE will not draw a partial circle. You are then returned to the beginning of the feature. Note that you may define the radius at any angle!

ARC

ARC starts out just like DEFINE except that you are asked to define a third co-ordinate which is the amount of deflection. For best results you should attempt to define the deflection point in the center of and perpendicular to the start and finish points. Defining a deflection point outside of these recommended boundaries will produce a very large arc which may draw off the screen. The arc drawn will always intersect the three reference points you have defined.

You will find that ARC is the very foundation of ARTWORX. Nature hates straight lines and when you try to outline a natural object on the screen, the best way I have found is to use the ARC command moving an inch or so at a time. If you look closely at any natural object and break the outline up into sections about 1 inch long or so, you will notice the entire object is made up of curved surfaces or arcs of a different radius.

You should be most careful when creating an arc near the bottom of the screen. ARC and ELLIPSE are the only features which will use the bottom of the screen as their lower boundary. It is therefore possible to draw an arc through the help line area. This is due to the nature of the routines not lending themselves easily to artifical boundaries.

ELLIPSE

This feature operates exactly like ARC except it draws an oval or ellipse. Note that this is a true ellipse and not just two arcs back to back! A line will connect the start and finish points which is to be used as a reference for you to define the deflection point. This line will be erased after you do so.

In ELLIPSE the amount of deflection cannot be larger than 1/2 of the length of the line between the start and finish points. You can create an ELLIPSE at any angle. For best results you should attempt to define the deflection point in the center of and perpendicular to the start and finish points.

POSITION

All features in this category will modify the position of any image on the screen.

RELOCATE

Upon selecting RELOCATE you will be presented with something you have not yet seen, a small pulsating box in the center of the screen. Don't be alarmed! It will not harm you! This is your advanced features window and you are going to be amazed at what this will do for you! Pay close attention to how the window operates because it is the foundation of 7 of the most advanced features.

RELOCATE will relocate any image you can get inside the window. The window can be moved around the screen with the joystick. The cursor keys on your computer (unshifted 5,6,7,8), control the growth or size of the window. At the bottom of the screen you will see 4 arrows representing the cursor keys which indicate the growth direction of the window. E.G. Try pushing the up arrow (key 7) and the window will shoot upward.

Next we see "Pos/Neg". Pos is for positive growth (larger) and Neg is for negative (smaller). Simply press "P" or "N" on the keyboard and then the appropriate cursor key and the window will react accordingly. Note that when in the negative growth mode that the cursor arrows work in the opposite direction.

Minimum window size is 12 X 12 pixels. Maximum window size is a 3000 pixel area and is indicated by a message at the bottom of the screen. Note that the maximum size is a total area inside the window. This means that when you reach maximum size, you could grow the window in one plain by reducing another. Also note that the Velocity adjustment refers to the window movement on the screen and not the speed of window growth.

So let's give it a try! Doodle something small on the screen and encompass it with the RELOCATE window. Then press the fire button. A message in the lower right corner of the screen will indicate "SCANNING". Scan time will vary with the number of pixels in the image being scanned and the window size. After a brief moment the message area will indicate "OK" and your image will seem to be pulsating. You may now use the joystick to relocate the image anywhere on the screen! When you have the image where you want it, press the fire button to commit it.

RELOCATE TIPS AND HINTS

1) Try to hug the image as tightly as possible with the window. This will ensure a fast scan time.

DUPLICATE

This feature operates similar to RELOCATE with the exception that it will duplicate the image instead of relocating it. The only other difference is when the scanning is finished and the "OK" is given, the image will not pulsate. Simply move the duplicated image away from the original.

DUPLICATE HINTS AND TIPS

1) Use DUPLICATE to relieve you of the monotonous chore of producing several identical objects.

2) Use DUPLICATE to create a duplicate image for experimenting with. In case you don't like the results, you'll still have the original.

ROTATE

This feature operates similar to the other two features in this category with the following exceptions.

1) After scanning, the image is rotated 90 degrees clockwise.

2) The original is erased.

3) The new image does not respond to the joystick. It is reproduced in the same location.

The image may be rotated as many times as you like.

ROTATE HINTS AND TIPS

If an image will go beyond the screen boundary when rotated, the program will abort the rotation. If this occurs, use RELOCATE to reposition the image away from the boundary.

TEXT

This category provides you with a variety of text styles or fonts. Upon selecting a font, you are instructed to enter your text using the keyboard as you normally would. Note that 20 characters is the maximum input at one time. After typing your text, press enter. You will see the familiar "SCANNING" message.

When "OK" is indicated, use the joystick to locate the text anywhere on the screen and commit with the fire button. Note that a very unique feature of the ARTWORX TEXT routine is the ability to locate text by pixel co-ordinates instead of the usual character block co-ordinates. This means that a single letter can have as many as 40,000 locations on the screen compared to the usual 700 locations!

You will notice that after you have committed the text, you are given the choice of continuing with that same font or returning to the main menu.

NORMAL: This is the standard Sinclair character set.

SLIGHT: Double height with no vertical compensation.

LARGE: Double height with double line thickness.

BOLD: Standard height with double line thickness.

TEXT HINTS AND TIPS

1) The keyboard can be used normally when entering text (caps, delete, inverse, etc).
2) Two additional fonts can be obtained by entering SLIGHT or NORMAL in inverse video. LARGE and BOLD will not work in inverse.

UTIL (system utilities)

COPY

COPY simply copies the drawing screen to the printer. ARTWORX comes set up for the TS 2040 or ZX printer, however output to the TASMAN CPI is easily done. LOAD the TASMAN interface software into the printer buffer and make the appropriate changes to the COPY routine at line #2315.

LOAD

This utility is for LOADing a previously saved drawing (SCREEN$).

SAVE

This utility allows you to SAVE your drawing to tape (or disc with disc version). When working on a complex drawing which may take several hours, be sure to SAVE the image frequently. This will ensure that you do not lose several hours of work in the event of a power failure or other malfunction. Be sure to SAVE the drawing with the BORDER color you wish to display it with!

UDG (user defined graphics)

This advanced and powerful graphics designer will enable you to create graphic symbols with ease and allow you to locate them anywhere on the screen! Upon entering UDG you are presented with an 8 X 8 grid and 4 banks of UDG storage. ARTWORX comes with a few examples in bank #1. You may assign your UDG to any of the 4 banks.

At the bottom of the screen is the command menu. Each command is accessed by pressing the key corresponding to the first letter of the desired command.

DESIGN

To create a UDG, press "D" for Design mode. You will see a small "+" cursor in the lower left corner of the grid. Use the joystick and fire button to turn on individual blocks in the grid. To turn a block off, place the cursor over the block and press the fire button again. The grid represents a character block enlarged 6 times. Actual size of the UDG is shown to the right of the grid.

When you are finished designing the UDG, you may change it to inverse by pressing "I" and change it back by pressing "I" again. When completely finished, press the space bar to return to the UDG main menu.

ASSIGN

Now you want to assign a storage area to your UDG. Press "A" for ASSIGN and you will be prompted as to which bank and to which letter of that bank you wish to assign the UDG to.

REDO

You may redesign any UDG by using REDO. Once again you will be prompted for bank and letter. The UDG will appear back up on the grid. You can modify it or re-assign it to a different location.

CALL

To apply the UDG to your drawing, press "C" to CALL the UDG. After committing the UDG to the screen, you may continue with another of the same UDG (RESUME) or hit the space bar for the UDG menu. Note that unlike most UDG designers, ARTWORX allows you to locate the UDG with pixel co-ordinates instead of the usual character block co-ordinates!

LOAD

This feature, in conjuction with save, allows you to LOAD from tape (or disc with disc version) previously saved banks of UDG. After they load, you are asked which bank to store them in.

SAVE

This will SAVE the UDG to tape (or disc with disc version) one bank at a time. You are asked which bank you would like to save and that's it!

UDG HINTS AND TIPS

1) You can apply the UDG created with ARTWORX to your own programs. See your computer users manual.

2) Try creating a large single object using several different UDG.

3) You can erase a UDG from a storage location by assigning nothing to that location. It is not necessary to erase a UDG from a location before assigning another UDG there.

ERASE

For that occasional slip of the wrist you are provided with four very useful and handy erasers.

GLOBAL

This is self-explanatory. You are, of course, given a warning in case you select this option accidently.

WINDOW

Same as all previous window rountines with the difference that whatever is in the window is erased.

COARSE

This is a more localized erase facility which, when toggled on, can be rubbed around like an eraser on paper. Note that COARSE has no XY co-ordinate indicator or Velocity control. It is not meant for fine work.

FINE

This is for fine work such as erasing a single line or pixel. Precision is possible in conjunction with Velocity 1. When toggled on, the tip of the cursor will erase only what it contacts.

MODIFY

These features provide you with the ability to modify or change the image in some novel and useful ways.

MAGNIFY

Again pretty much self-explanatory. Anything in the window will be magnified by a factor of 2 in both the X and Y axis. Note that if the image to be magnified will go off the screen edge, that magnify will be aborted and the feature will return to the beginning. Use relocate to move the image further from the edge.

COMPRESS

The feature does the opposite of magnify however, it is named COMPRESS and not REDUCE for a very important reason. It is impossible for a computer with the screen resolution of the 2068, to reduce an image accurately. Due to the way in which computers round off binary numbers, some image information will be lost. When the computer magnifies it simply multiplies the pixel co-ordinates of the image by 2, but to reduce it must cut the number of pixels and their co-ordinates in half. In many situations the computer must try to plot 1/2 of a pixel which it can not do. As a result certain image distortion will sometimes occur.

MAGNIFY & COMPRESS HINTS & TIPS

1) Due to this loss of image information, a compressed image will probably not return to its original shape when magnified or vise versa. Therefore if you want to experiment with COMPRESS or MAGNIFY you should create a duplicate of the image to experiment with, so as not to lose the original.

2) You can create some interesting new text fonts by compressing or magnifying them.

MIRROR

Invert will mirror vertically and Lateral will mirror side to side. Once the scan is finished, the mirrored image will appear pulsating over top of the original image. You may then move the mirrored image around the screen and commit it with the fire button.

MIRROR HINTS & TIPS

1) Mirror is useful when you are drawing any symmetrical object. You need only draw 1/2 or even 1/4 of the image and mirror the rest.

COLOR

What are graphics without color, Right!?! The SPECTRUM and TS 2068 are amazingly capable computers but there is some design compromise where the color attributes are concerned. You may have already found out through your own experimentation with the computer. I am referring to the problem of color bleeding which occurs when one line or pixel of a certain color intersects a character block already occupied by another line or pixel of a different color. To illustrate the problem try this little exercise with ARTWORX.

1) Select red INK, go into SKETCH and doodle a little.

2) Now select blue INK and go into SKETCH and doodle in the same area.

You will notice that the red line takes on the now dominant or current blue color. Notice that the red lines change in blocks of blue. To illustrate this even more dramatically. Try this exercise:

1) Select red INK and go into CIRCLE and create a small circle of about two inches in diameter on the screen.

2) Now go into FILL and, still in red INK, fill the circle.

3) Now select green INK and go into SKETCH. Draw a green line through the circle.

The reason for this is that the computer does not have a great deal of memory set aside for the attribute file and because of this, each character block (or text location) can only hold one color at a time. When a different color line or pixel enters a character block, the entire block becomes that color.

Now for the good news. ARTWORX provides a rather novel way of making this problem easier to live with. You will notice the categories "PAPER" and "paper". The category in capital letters represents a global paper color change. The lower case category represents a local paper color change. Now listen up. This gets a little involved. You may surmise by the chunky color changes which occur where colors intersect, that nice, curved lines with a different color on each side of the line would be impossible. Well this is true however, with skilled use of local paper color changes, the illusion of smooth color transition can be created. Try this exercise first to illustrate the problem.

1) Select white INK, go into CIRCLE and create a circle two inches in diameter in the center of the screen.

2) Then draw a larger circle around the first circle, about twice the size of the first circle.

3) Fill the first circle with red INK.

4) Fill the space between the two circles with green INK.

What a mess!

Now try this:

1) Create another circle with a circle inside.

2) Fill the area between the two circles with green INK.

3) Now for the magic! Select red local paper, bring the square cursor to the circle in the center, toggle it on and move it around inside the circle. Voila!

The illusion created is that of two different colors of ink side by side on a curved surface, but the actual situation is green ink and red paper.

This may be a difficult concept to understand and it is recommended that you study some of the examples of artwork on the "B" side of the ARTWORX cassette. By observing the examples of art work and with your own experimentation, I'm sure you will obtain a clear understanding of this concept.

BORDER

Go ahead, figure it out!

COLOR HINTS & TIPS

1) When sending your picture to a printer remember that the paper color is just that, PAPER only! The image that may come out on the printer may be very different than it looks on the screen, depending on how ink and paper are used for illusion. TASCOPY is a printer utility from TASMAN SOFTWARE which will produce accurate printouts of your screen regardless of whether the color is PAPER or INK. TASCOPY will show colors as different shades.

2) You will notice that the cursor becomes the same color as whatever it is over top of. The natural color of the transparent cursor is white. Therefore it is recommended that all drawings be created on a dark paper for maximum cursor visibility. The lighter the paper color, the more difficult the cursor is to see. The cursor cannot be seen on white paper. Global paper changes are best used for display purposes only, after the drawing is completed.

3) Global paper changes will not effect local paper colors with one exception! When a global paper color is selected and a local paper of the same color already exists on the screen, then that local paper will no longer exist.

4) When you load a finished picture back into the computer, if you wish to experiment with a global paper, you must first synchronize the computer paper change algorithm with the drawing by first selecting the global paper color which is the same as the paper color the drawing was saved with.

5) The border color should be set slightly different than the paper color so that the drawing boundaries are easily seen.

6) The cursor, window, UDG, or any text may seem to disappear when moved around the screen when the following conditions exist. If you have been in a light PAPER color and your INK was black and you switch back to black PAPER and your INK is now white. Even though you may have erased the Black ink, the character block still carries the black attribute. Remember that the cursor will turn the same color as the image it is passing over. You now have a situation where the PAPER is black and the cursor turns black. BE CAREFUL!

COLOR AND THE FEATURES

Note that every feature of ARTWORX which creates an image on the screen, (that is all features except the erasers and COPY, LOAD and SAVE) will produce their image in any ink color you select. An interesting note about all the features in the POSITION and MODIFY categories. These features will relocate, duplicate etc. in a different color than the original and will leave the original unchanged.

Note that all images in TEXT, RELOCATE, DUPLICATE, and MIRROR will seem white or transparent until committed. They will then commit with the color you have previously selected.

A useful trick with RELOCATE is to use it to change the entire color of an object simply by selecting the desired new color. Go into RELOCATE, place the window around the object, and start the scan operation. When the "OK" is given, DO NOT move the joystick! Just press the fire button to commit the image with a new color in the same location.

Always draw or outline your picture completely before adding color. Remember to save your image before adding any color. This will make experimentation less risky.

ARTWORX GALLERY

GALLERY is a companion utility for ARTWORX which allows you to store up to five ARTWORX masterpieces in RAM of your computer and then cycle through them on the screen something like a slide show! (Note that the disc version does not store the pictures in RAM. It accesses directly from disc).

You can adjust the time interval between pictures from .01 seconds to 60 seconds. Any time entered smaller than .01 will cause the picture to pause.

BEFORE LOADING GALLERY, LOWER RAMTOP BY TYPING - CLEAR 30499 (cassette version only!)

The program does not require much explanation as you are prompted through the operation. After GALLERY has loaded you are presented with the menu.

Note that option #4 "Save set up" will SAVE the entire GALLERY program and the pictures so that you only have to set it up once. (In the disc version, only the set up parameters are saved. Also, once you have set up GALLERY, you may return to the menu and change the cycling time at any time.

There are three command keys for use when the program is in the view mode. Press "P" to pause a frame or picture, press "F" to fast forward and press the space bar to return to the menu. There is no menu displayed for these commands so that the screen is left uncluttered during the show, so remember them.

One interesting ability of GALLERY is animation! You can create some quite good animation by loading in the appropriate five pictures and then selecting the fastest cycling time (.01 seconds). However, animation is severly limited by five frames. Note that animation with the disc version is somewhat crude because the cycling speed of each picture is limited to how fast a picture (SCREEN$) can be loaded from the disc (approx. 3 per second). This disadvantange is offset somewhat by the larger number of pictures the disc version can handle. GALLERY can also be used for advertising by cycling through ads or messages in a store window or retail booth! Your only limited by your imagination (and your RAM)!

ENJOY!

BACK-UP COPIES

1. Break into the loader at the beginning of the tape by using MERGE to load it.

2. Insert a fresh tape and SAVE the loader by typing SAVE "artworx" LINE 0. DO NOT REWIND THE TAPE!

3. Now position the original tape just after the loader. Type LOAD "artworx" SCREEN$.

4. Insert your back-up tape and type SAVE "artworx" SCREEN$. After the SAVE is complete stop the tape. DO NOT REWIND THE TAPE!

5. Now position the original tape just after the SCREEN$. Type MERGE "" . After the load is completed, stop the tape.

6. Insert your back-up tape and type SAVE "artworx" LINE 8900. After the SAVE is completed, stop the tape. DO NOT REWIND THE TAPE!

7. Now position the original tape just after the BASIC. Type CLEAR 49299. Then type LOAD "" CODE and play the tape. After the load is completed, stop the tape.

8. Insert your back-up tape and type SAVE "artworx" CODE 49300, 16235. After the SAVE is completed, stop the tape.

The program ARTWORX and ARTWORX GALLERY and the accompanying documentation are copyright and is sold subject to the condition that it shall not be lent, sold, resold, hired out or otherwise circulated.

YOUR THOUGHT FOR THE DAY

WHEN SOFTWARE PIRACY BECOMES SO WIDESPREAD THAT PROGRAMMERS NO LONGER FIND THE REWARDS ADEQUATE, THEN PROGRAMS LIKE THIS WILL NOT EXIST!